

4. GENERAL PROTECTION/COLLECTION STRATEGIES

4.1. Chapter Overview

This chapter details the specific response strategies and resources to protect as outlined by the participants of the GRP workshop for the South Puget Sound area. It describes the strategies determined for each area and the prioritization of those strategies. Note that GRPs only address protection of sensitive **public** resources. It is the responsibility of private resource owners and/or potentially liable parties to address protection of private resources (such as commercial marinas, private water intakes, and non-release aquaculture facilities).

Maps & Matrices

The maps in this chapter provide information on the specific location of booming strategies. They are designed to help the responder visualize response strategies. Details of each booming strategy are listed in corresponding matrix tables. Each matrix indicates the exact location, intent and implementation of the strategy indicated on the map. The "Status" column describes whether the strategy has been visited or tested in the field, and the date of the visit/test. Most strategies include a number for the corresponding shoreline photo, which is available on the Washington Department of Ecology's internet site at <http://www.ecy.wa.gov/apps/shorephotos/>.

Major Protection Techniques

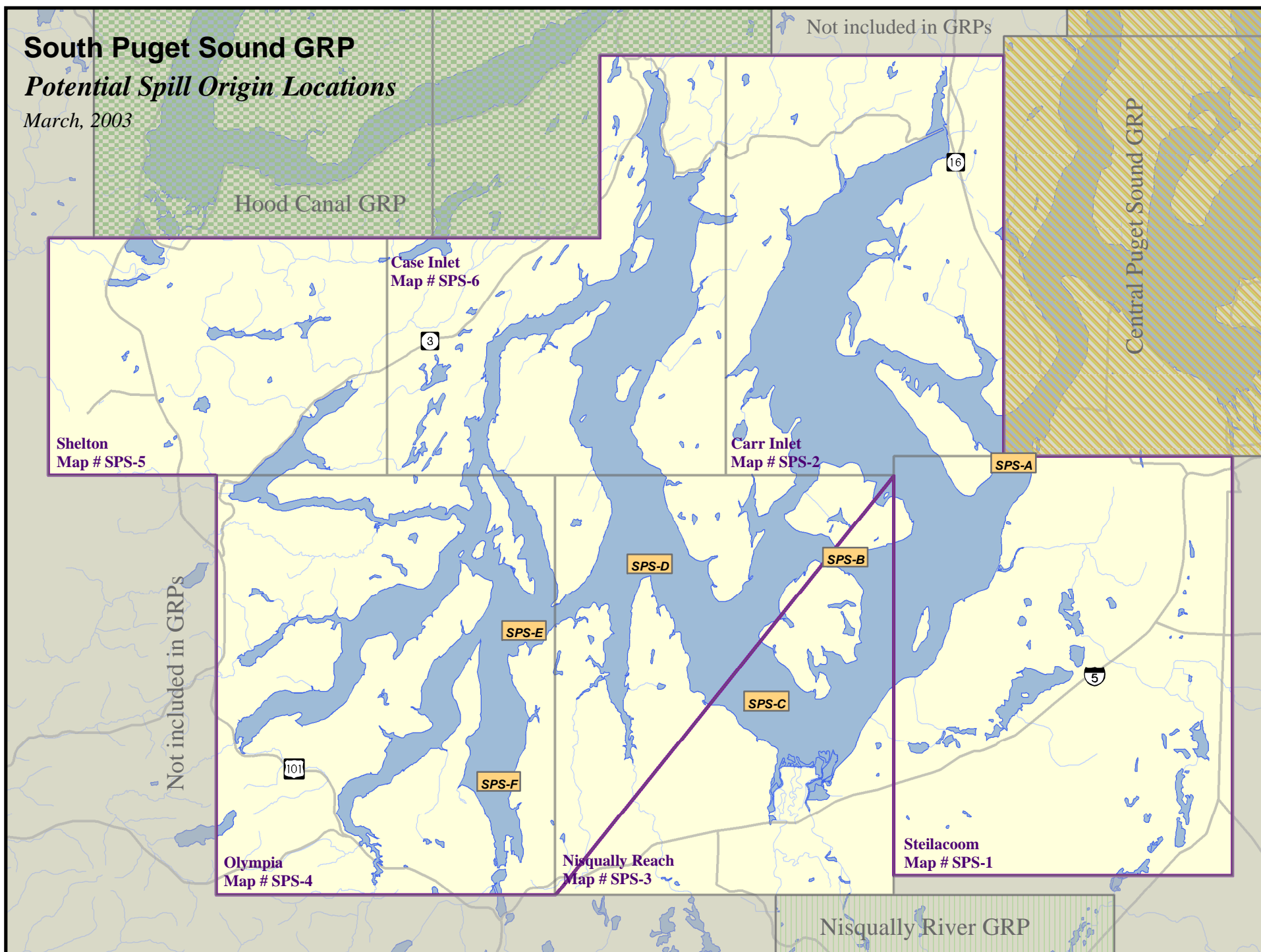
All response strategies fall into one of three major techniques that may be utilized either individually or in combination. The strategies listed in Section 4.2 are based on the following techniques, and are explained in detail in Section 4.3:

Dispersants: Washington State Policy currently does not allow use of dispersants in this area. Certain chemicals break up slicks on the water. Dispersants can decrease the severity of a spill by speeding the dissipation of certain oil types. Their use will require approval of the Unified Command. Dispersants will only be used in offshore situations under certain conditions, until further determinations are made by the Area Committee and published in the Area Contingency Plan.

In Situ Burning: Approval to burn in this area is unlikely due to the proximity of population to a potential burn site. Burning requires the authorization of the Unified Command, who determine conformance of a request to burn with the guidelines set forth in the Area Plan. This option is preferable to allowing a slick to reach the shore provided that population areas are not exposed to excessive smoke. Under the right atmospheric conditions, a burn can be safely conducted in relative close proximity to human population. This method works on many types of oil, and requires special equipment including a fire boom and igniters.

Mechanical Recovery and Protection Strategies: If a spill is too close to shore to use In Situ burning or dispersants, the key strategies are skimming and use of collection, diversion, or exclusion booming to contain and recover the oil, and prevent it from entering areas with sensitive wildlife and fisheries resources. These options are described in detail in Appendix A. Specific skimming strategies are not listed in the maps and matrices, but skimming should be used whenever possible and is often the primary means of recovering oil and protecting resources, especially when booming is not possible or feasible.

Priorities: The strategy priority tables (Section 4.2.) were developed using specific locations where spills are likely to occur. Trajectory modeling was used for each of these "Potential Spill Origins" to identify sensitive resources that would likely be impacted within the initial hours of the spill. A booming strategy priority table was developed for each of the "Potential Spill Origins" based on the sensitivity of resources, feasibility, etc. **Booming strategies should be deployed following the priority table for the "Potential Spill Origin" closest to the actual spill origin.** The map on page 4-2 shows the locations of all Potential Spill Origins for the South Puget Sound GRP. The booming strategies indicated in the priority tables are explained in detail in the Maps & Matrices section (Section 4.3.). It is implied that control and containment at the source is the number one priority of any response. If in the responder's best judgment this is not feasible, then the priorities laid out in the priority tables take precedence over containment and control.



4.2.2 Booming Strategy Priority Tables

Table 4-1

Potential Spill Origin: SPS-A - Fox Island/Tacoma Narrows			
BOOMING PRIORITY	STRATEGY NUMBER	MAP PAGE NUMBER	COMMENTS
1	SPS-21	4-10	Refer to South Puget Sound GRP for SPS strategies
2	SPS-22	4-10	
3	CPS-76	4-19	Refer to Central Puget Sound GRP for CPS strategies
4	CPS-77	4-19	
5	CPS-74	4-19	
6	CPS-75	4-19	
7	CPS-79	4-19	
8	CPS-78	4-19	
9	CPS-71	4-19	
10	SPS-1	4-8	Refer to South Puget Sound GRP for SPS strategies
11	SPS-7	4-9	
12	SPS-6	4-9	
13	SPS-4	4-9	
14	SPS-5	4-9	
15	CPS-73	4-19	Refer to Central Puget Sound GRP for CPS strategies
16	CPS-72	4-19	

Table 4-2

Potential Spill Origin: SPS-B - Combined Balch Passage and McNeil Island			
BOOMING PRIORITY	STRATEGY NUMBER	MAP PAGE NUMBER	COMMENTS
1	SPS-21	4-10	
2	SPS-22	4-10	
3	SPS-23	4-10	
4	SPS-24	4-10	
5	SPS-25	4-10	
6	SPS-39	4-10	
7	SPS-26	4-10	
8	SPS-27	4-10	
9	SPS-1	4-8	
10	SPS-28	4-10	
11	SPS-29	4-10	
12	SPS-30	4-10	

Table 4-3

Potential Spill Origin: SPS-C - Nisqually National Wildlife Refuge			
BOOMING PRIORITY	STRATEGY NUMBER	MAP PAGE NUMBER	COMMENTS
1	SPS-28	4-10	
2	SPS-29	4-10	
3	SPS-30	4-10	
4	SPS-26	4-10	
5	SPS-27	4-10	
6	SPS-25	4-10	
7	SPS-31	4-10	
8	SPS-32	4-10	
9	SPS-33	4-10	
10	SPS-34	4-10	
11	SPS-35	4-10	
12	SPS-36	4-10	
13	SPS-37	4-10	
14	SPS-39	4-10	
15	SPS-38	4-10	
16	SPS-23	4-10	
17	SPS-24	4-10	

Table 4-4

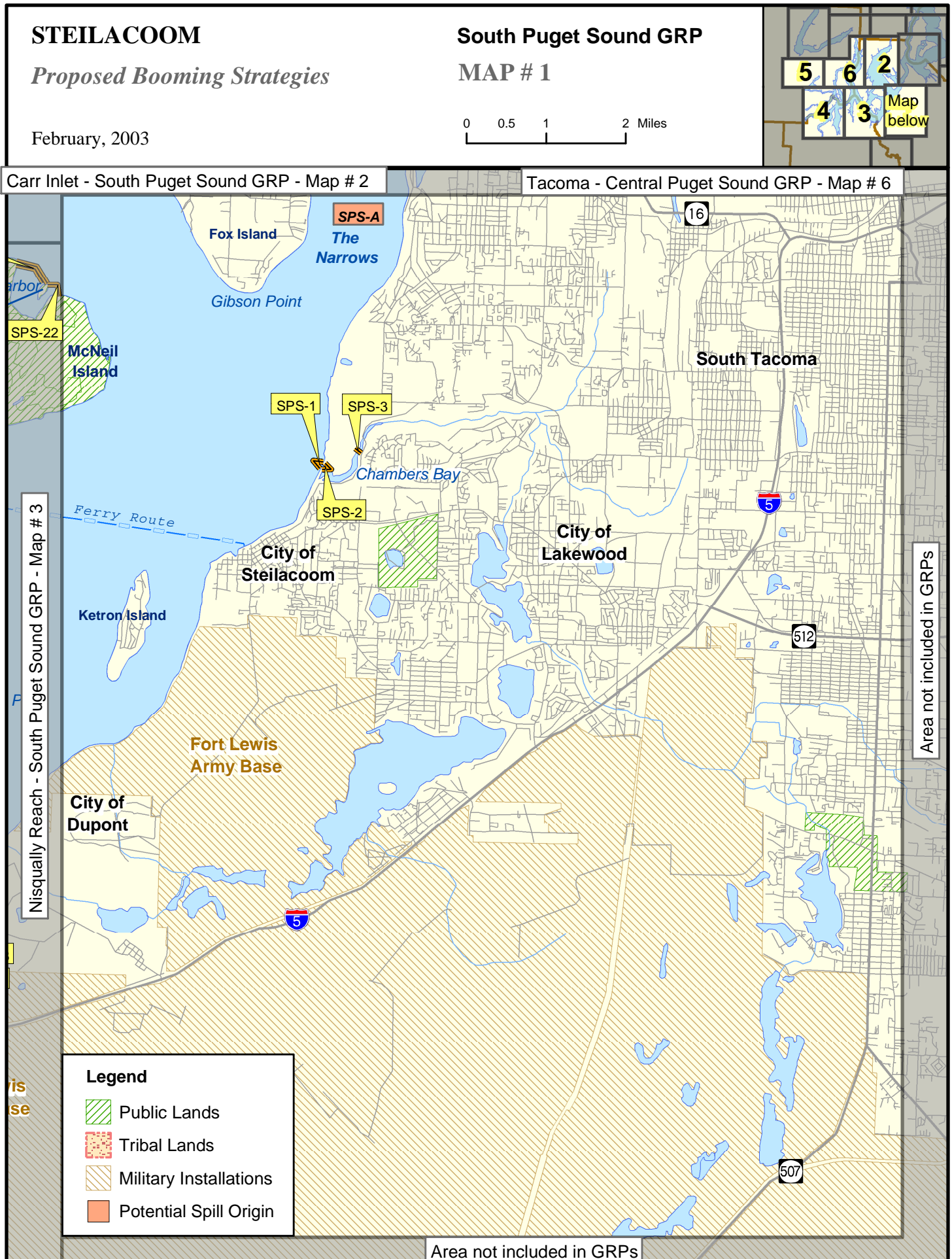
Potential Spill Origin: SPS-D – Johnson Point			
BOOMING PRIORITY	STRATEGY NUMBER	MAP PAGE NUMBER	COMMENTS
1	SPS-41	4-10	
2	SPS-46	4-10	
3	SPS-38	4-10	
4	SPS-37	4-10	
5	SPS-36	4-10	
6	SPS-35	4-10	
7	SPS-34	4-10	
8	SPS-39	4-10	
9	SPS-25	4-10	
10	SPS-56	4-11	
11	SPS-55	4-11	
12	SPS-47	4-11	

Table 4-5

Potential Spill Origin: SPS-E – Boston Harbor			
BOOMING PRIORITY	STRATEGY NUMBER	MAP PAGE NUMBER	COMMENTS
1	SPS-46	4-10	
2	SPS-47	4-11	
3	SPS-56	4-11	
4	SPS-65	4-11	
5	SPS-66	4-11	
6	SPS-64	4-11	
7	SPS-63	4-11	
8	SPS-39	4-10	
9	SPS-67	4-11	
10	SPS-49	4-11	
11	SPS-41	4-10	
12	SPS-48	4-11	
13	SPS-57	4-11	
14	SPS-50	4-11	

Table 4-6

Potential Spill Origin: SPS-F - Budd Inlet			
BOOMING PRIORITY	STRATEGY NUMBER	MAP PAGE NUMBER	COMMENTS
1	SPS-53	4-11	
2	SPS-52	4-11	
3	SPS-48	4-11	
4	SPS-51	4-11	
5	SPS-50	4-11	
6	SPS-49	4-11	
7	SPS-47	4-11	
8	SPS-46	4-10	
9	SPS-55	4-11	
10	SPS-56	4-11	
11	SPS-65	4-11	
12	SPS-66	4-11	
13	SPS-64	4-11	
14	SPS-63	4-11	
15	SPS-67	4-11	



CARR INLET

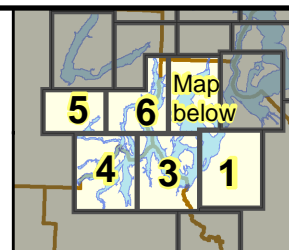
Proposed Booming Strategies

February, 2003

South Puget Sound GRP

MAP # 2

0 0.5 1 2 Miles

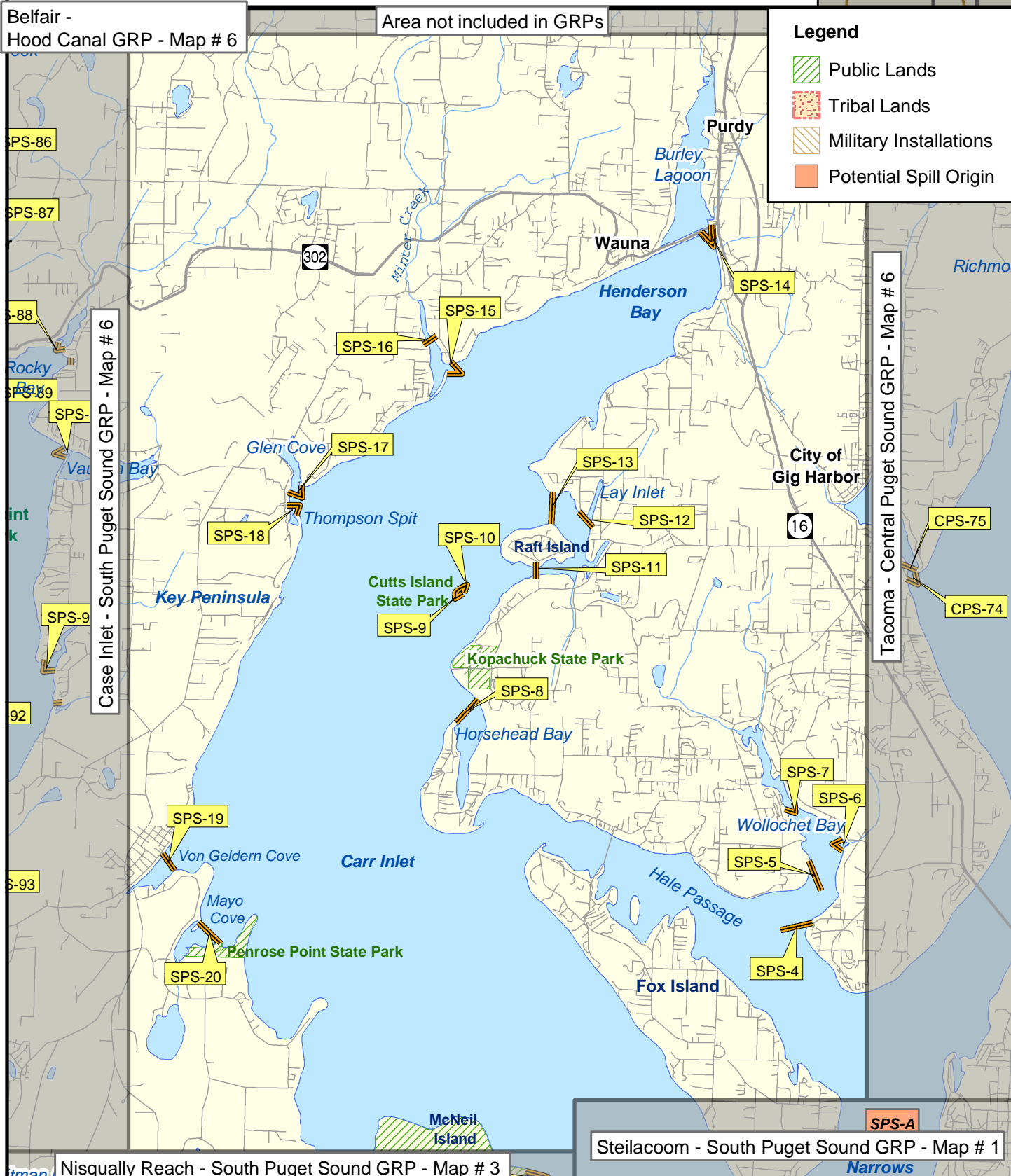


Belfair - Hood Canal GRP - Map # 6

Area not included in GRPs

Legend

- Public Lands
- Tribal Lands
- Military Installations
- Potential Spill Origin



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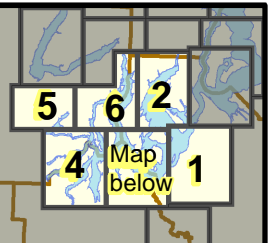
Proposed Booming Strategies

February, 2003

South Puget Sound GRP

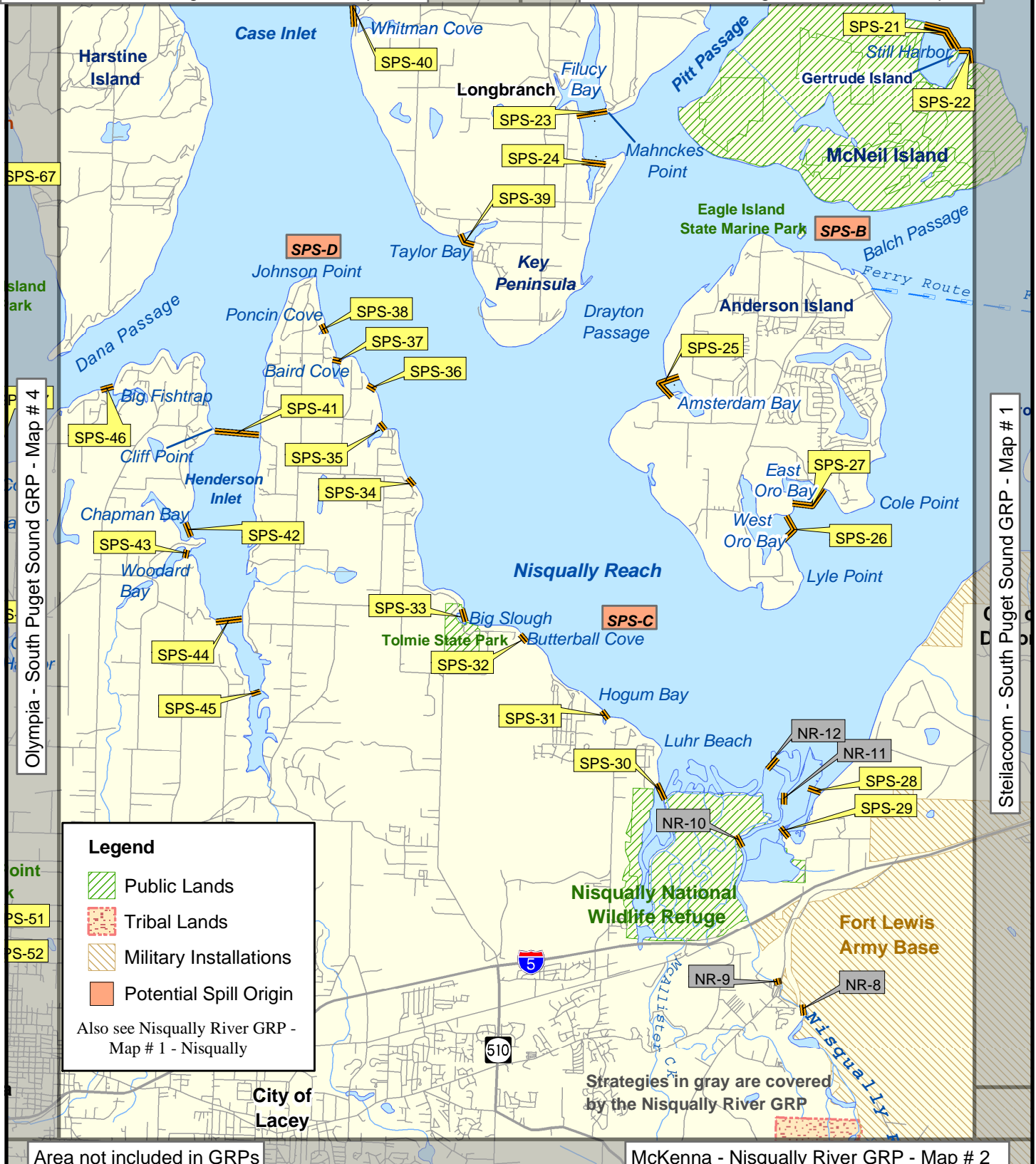
MAP # 3

0 0.5 1 2 Miles



Case Inlet - South Puget Sound GRP - Map # 6

Carr Inlet - South Puget Sound GRP - Map # 2



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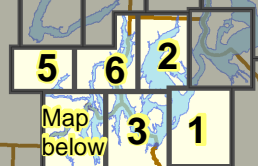
Proposed Booming Strategies

February, 2003

South Puget Sound GRP

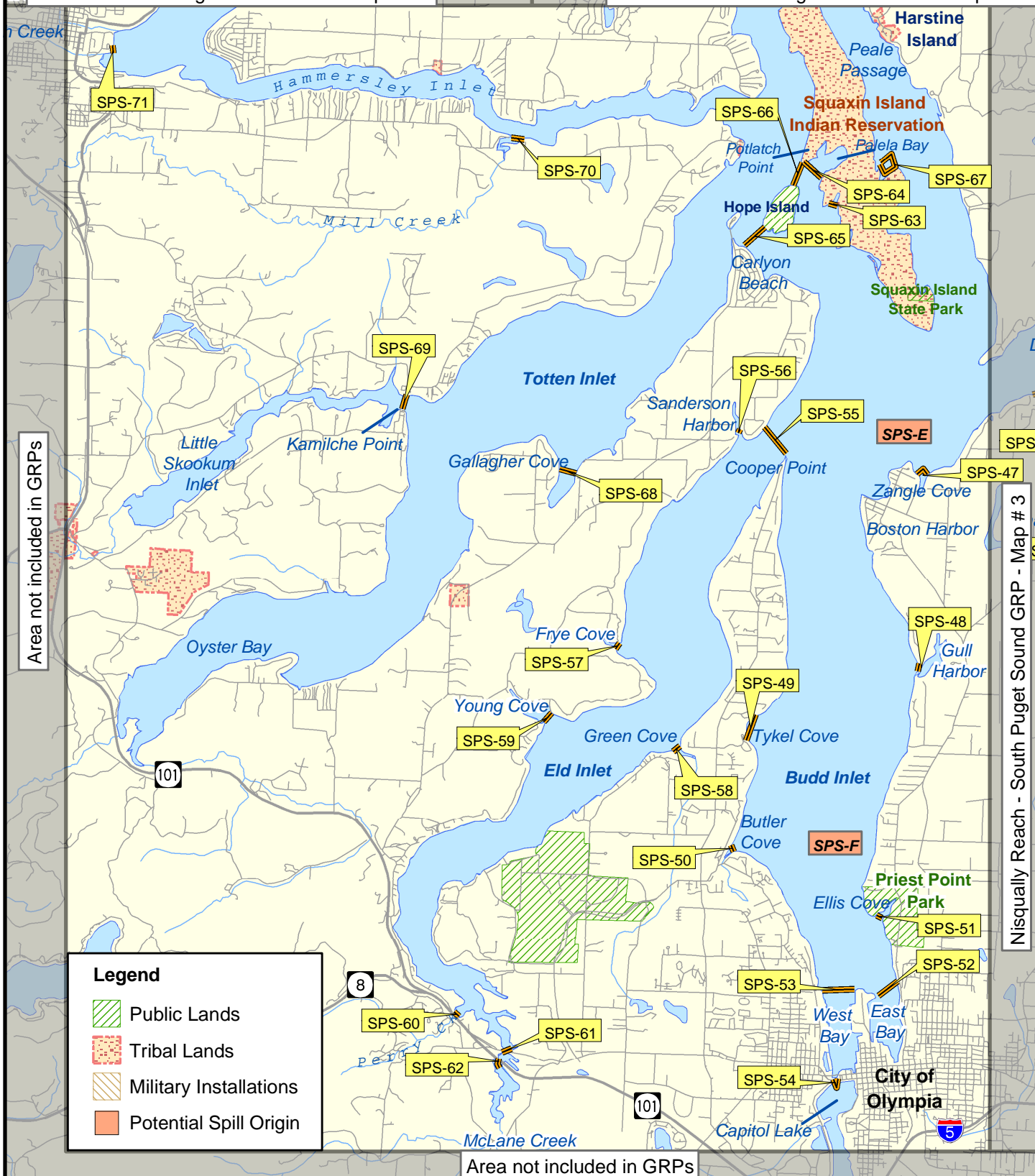
MAP # 4

0 0.5 1 2 Miles



the Shelton - South Puget Sound GRP - Map # 5

Case Inlet - South Puget Sound GRP - Map # 6

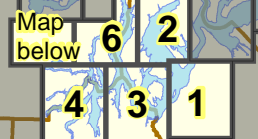


SHELTON*Proposed Booming Strategies*

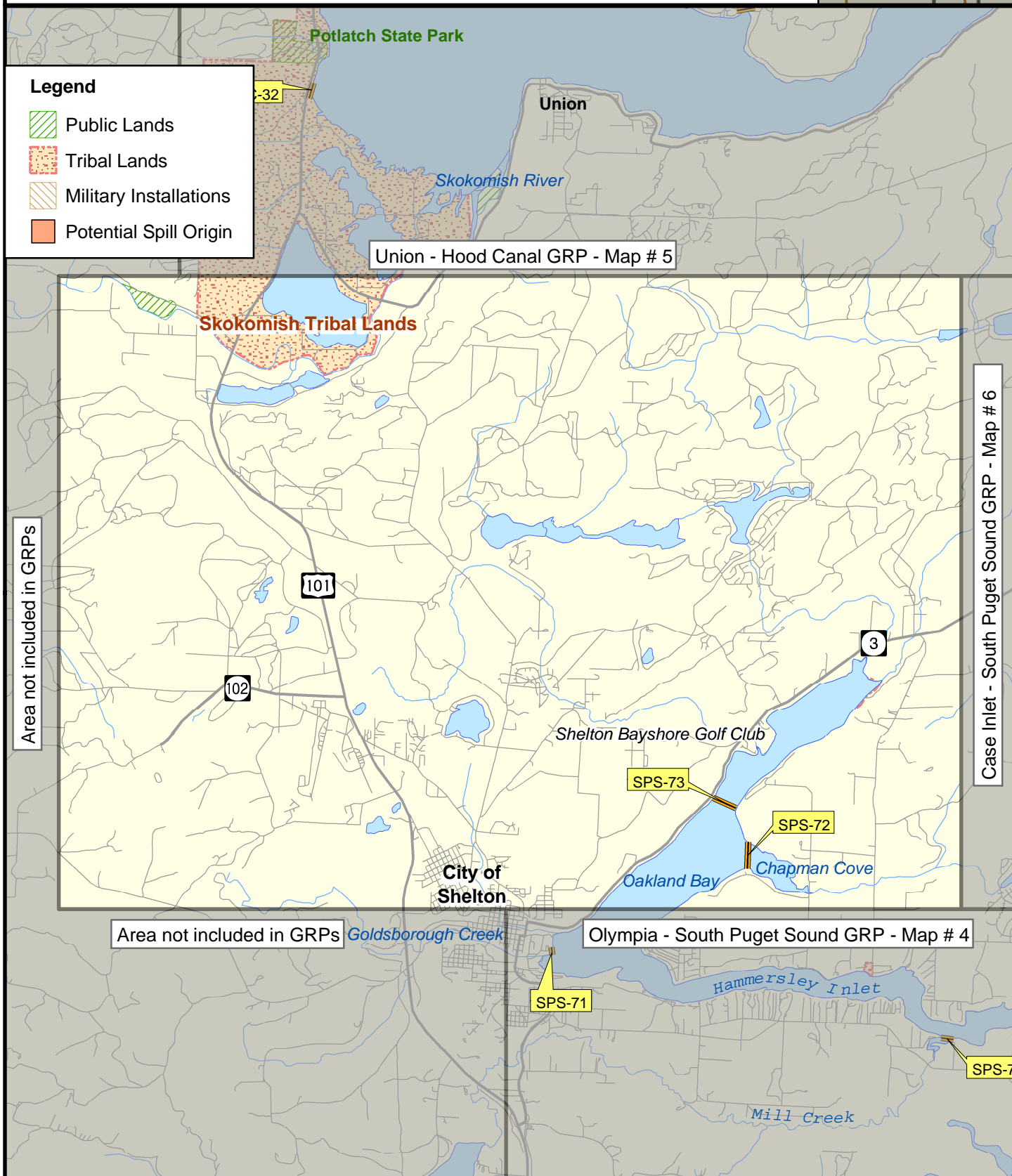
February, 2003

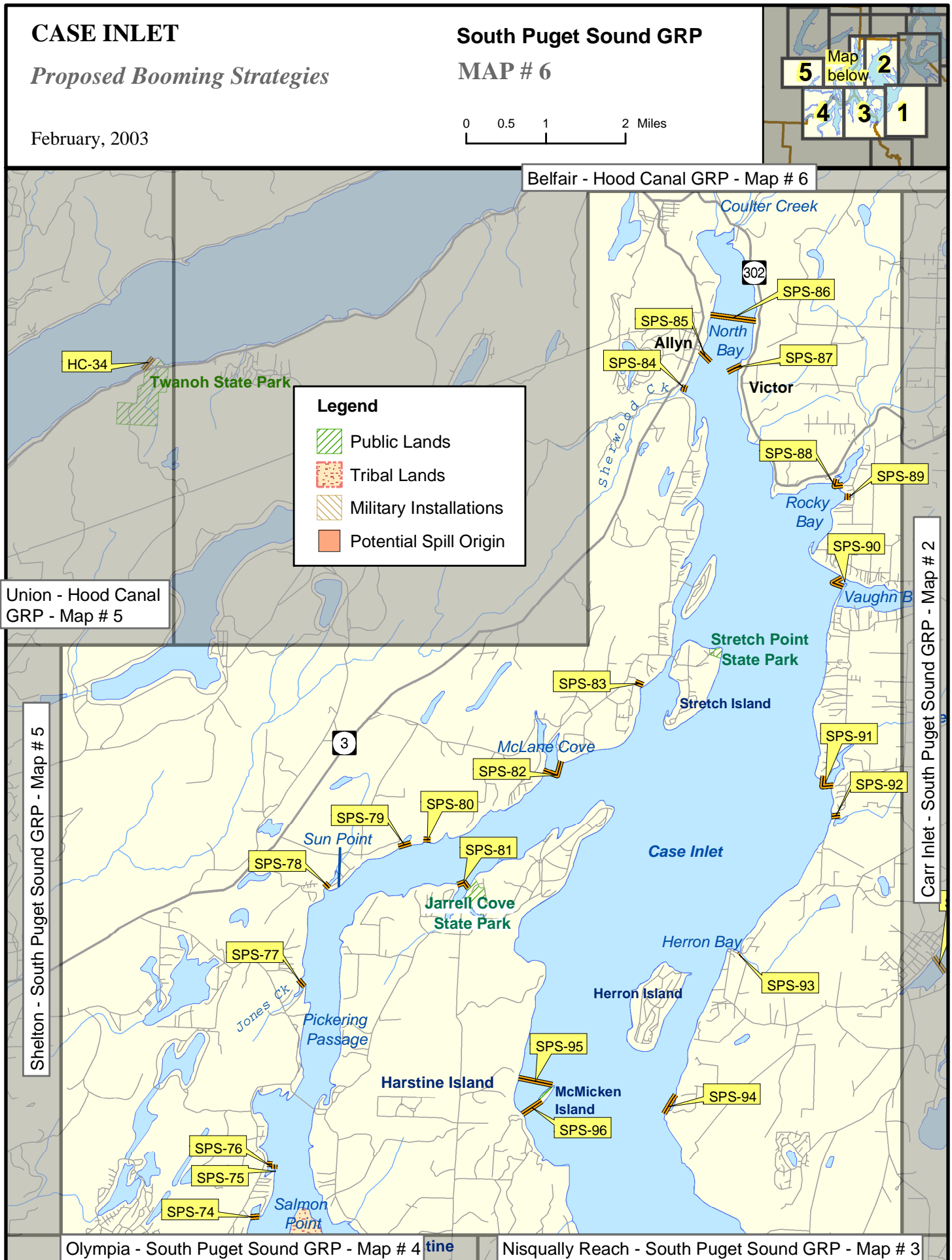
South Puget Sound GRP**MAP # 5**

0 0.5 1 2 Miles

**Legend**

- Public Lands
- Tribal Lands
- Military Installations
- Potential Spill Origin





4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-1		Chambers Bay PIE0145 47°-11.25'N 122°-35.00'W	Exclusion booming - Keep oil out of Chambers Bay.	400'	Deploy boom in a chevron configuration on the west side of the railroad trestle to keep oil out of the bay.	Boise Cascade	Chambers Creek Road.	Fish ladder, salmonids, creek estuary.
SPS-2		Chambers Bay PIE0145 47°-11.24'N 122°-34.97'W	Containment booming - Keep spill inside the bay.	400'	Deploy boom in a chevron configuration on the east side of the railroad trestle to keep oil in the bay.	Steilacoom	Chambers Creek Road.	Fish ladder, salmonids, creek estuary.
SPS-3		Chambers Bay PIE0146 47°-11.44'N 122°-34.40'W	Exclusion booming - Keep oil out of the fish ladder.	200'	Deploy boom across the north end of the bay to keep oil out of the fish ladder and trap.	Steilacoom	Chambers Creek Road.	Fish ladder, salmonids, creek estuary.
SPS-4		Wollochet Bay PIE0481 47°-16.01'N 122°-35.79'W	Deflection/ Collection - Keep oil out of bay.	2000'	Anchor to boat ramp near old ferry dock, tend end w/ boat (30" boom in high winds).	Wollochet close to Tacoma Narrows Airport.	Road access around entire bay. Private property access to boat ramp for (a).	Herring smelt and sandlance spawning, juvenile crab & geoduck.
SPS-5		Wollochet Bay PIE0460 47°-16.24'N 122°-36.69'W	Deflection/ Collection - Keep oil out of bay.	2000'	Anchor to cement bulkhead just around point near E Cromwell, tend end w/ boat (30" boom in high winds).	same as above.	same as above.	same as above.
SPS-6		Sullivan Creek PIE0477 47°-16.80'N 122°-35.34'W	Exclusion booming - Keep oil out of creek.	400'	Deploy boom in a chevron configuration across the creek mouth.	same as above.	same as above.	same as above.
SPS-7		Wollochet Bay PIE0474 47°-17.18'N 122°-36.17'W	Exclusion booming - Keep oil out of the head of the bay.	1500'	Exclude end of bay w/ chevron formation.	same as above.	same as above.	same as above.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-8		Horse Head Bay PIE0436 47°-17.79'N 122°-41.02'W	Exclusion Booming - Keep oil out of bay.	2000'	Deploy boom to close off bay.	Forest Beach or Kopachuck State Park. Boat ramp on SE end of Horse Head Bay.	Boat	Fisheries and wildlife (uncertain about resources, may be low priority).
SPS-9		Cuts Island - South End PIE0423 47°-19.19'N 122°-41.27'W	Exclusion Booming - Keep oil off island.	1200'	Deploy boom in a chevron configuration to protect the south end of the island.	Purdy or Gig Harbor.	Boat	Shellfish & State Park, Harbor seal haulout.
SPS-10		Cuts Island - North End PIE0423 47°-19.57'N 122°-41.81'W	Exclusion Booming - Keep oil off island.	1200'	Deploy boom in a chevron configuration to protect the north end of the island.	Purdy or Gig Harbor.	Boat	Shellfish & State Park, Harbor seal haulout.
SPS-11		Raft Island PIE0415 47°-19.52'N 122°-40.03'W	Exclusion Booming - Keep oil off island.	800'	Boom along bridge w/800' boom.	Purdy or Gig Harbor.	Road access from bridge, access via private property N. side of Is. and small bay on mainland, road access to E side of Lay Inlet.	Clams, harbor seal haulouts and shellfish.
SPS-12		Lay Inlet PIE0407 47°-20.04'N 122°-39.31'W	Exclusion Booming - Keep oil out of Lay Inlet.	600'	Boom mouth of Lay Inlet.	Purdy or Gig Harbor.	same as above.	Clams, harbor seal haulouts and shellfish.
SPS-13		Raft Island PIE0418 47°-20.15'N 122°-39.86'W	Exclusion Booming - Keep oil off island.	2000'	Boom north side of island w/ 2000' from large floating dock on island to shoreline directly to the north.	Purdy or Gig Harbor.	same as above.	Clams, harbor seal haulouts and shellfish.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-14		Burley Lagoon PIE0387 47°-23.03'N 122°-37.60'W	Exclusion Booming - Keep oil out of lagoon.	2000'	Double chevron @ entrance to lagoon. Anchor both to powerline tower and NE bridge abutment. Need - (2) 100lb anchors @ apex.	Purdy	Good road access from Hwy 302.	Wildlife, shellfish, juvenile salmon and waterfowl concentration.
SPS-15		Minter Creek PIE0354 47°-21.55'N 122°-41.50'W	Exclusion Booming - Keep oil out of creek.	1000'	Close off creek with chevron, can use trees on N side of creek as anchors.	Boat launch @ Wauna.	Land access to Sunrise and Minter Beaches.	Minter Creek Hatchery, archeological site and shellfish.
SPS-16		Minter Creek PIE0355 47°-21.85'N 122°-41.77'W	Exclusion Booming - Keep oil out of creek.	500'	Deploy boom running NE/SW along pilings about 1/8 mile upstream from Oyster Co.	Boat launch @ Wauna.	Land access to Sunrise and Minter Beaches.	Minter Creek Hatchery, archeological site and shellfish.
SPS-17		Glen Cove PIE0346 47°-20.38'N 122°-43.73'W	Exclusion Booming - Keep oil out of cove.	1000'	Deploy boom in a chevron configuration across the mouth of Glen Cove.	Glen Cove boat launch in Wauna.	Boat	Cove, shoreline, fisheries.
SPS-18		Thompson Spit PIE0340 47°-20.04'N 122°-43.76'W	Exclusion Booming - Keep oil out of cove.	200'	Deploy boom in a chevron configuration across the mouth of the cove.	Glen Cove boat launch in Wauna.	Boat	Cove, shoreline, fisheries.
SPS-19		Van Geldern Cove PIE0322 47°-16.44'N 122°-45.41'W	Exclusion Booming - Keep oil out of cove.	2000'	Place boom at launch ramp on north shore across to closest point on south shore. Anchor at middle.	City of Home.	Road access on both sides of cove.	Salmon spawning creek, waterfowl, brant.
SPS-20		Mayo Cove (Penrose State Park) 47°-15.75'N 122°-44.81'W	Diversion Booming - Isolate small bay on south shore of cove.	2000'	Angle NE from spit (PIE0316) to wooden bulkhead at Penrose State Park (PIE0310).	Penrose State Park.	Boat launch and good roads; State Parks.	Sensitive nesting species, seabird concentrations, surf smelt, herring, & sandlance spawning.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-21		Still Harbor - SE McNeil PIE0596 47°-13.30'N 122°-39.68'W	Exclusion Booming - Prevent oil from entering harbor.	5000'	Double chevron from Baldwin Pt. to Gertrude Is.	Possible to stage from the penitentiary (security issue high priority on McNeil Island). Foss has access to island.	Boat access only. Road exists but security clearance necessary. Must clear any operations with prison staff.	Marine mammal haulout, 400 seals (one of largest). Shellfish, waterfowl, great blue heron.
SPS-22		Still Harbor - SE McNeil PIE0592 47°-13.08'N 122°-39.40'W	Exclusion Booming - Prevent oil from entering harbor.	2000'	Double chevron from Gertrude Is. to E shore. Need - (2) 100# anchors @ each apex = total of 100# anchors.	same as above.	same as above.	same as above.
SPS-23		North Filucy Bay PIE0278 47°-12.43'N 122°-44.83'W	Exclusion Booming - Keep oil out of bay.	2000'	Deploy boom across the entrance to the north part of the bay from Mahnckes Point to the beach directly to the west.	Longbranch	Limited road access. County boat launch outside bay to the south.	Protect archaeological and shellfish sites.
SPS-24		South Filucy Bay PIE0266 47°-11.86'N 122°-44.75'W	Exclusion Booming - Keep oil out of bay.	1500'	Deploy boom across the entrance to the south part of the bay.	Longbranch	Limited road access. County boat launch outside bay to the south.	Protect archaeological and shellfish sites.
SPS-25		Amsterdam Bay (NW side of Anderson I.) PIE0675 47°-21.85'N 122°-41.77'W	Exclusion booming - Keep oil out of bay.	1000'	Boom off bay with chevron formation. Need shore anchors and 100# anchor at apex. Bay is shallow: 10'-20' at mouth.	Steilacoom	Boat access on south shore.	Clams, herring and sandlance.
SPS-26		Anderson Island - West Oro Bay PIE0641 47°-08.29'N 122°-42.03'W	Exclusion booming - Keep oil out of bay.	2200'	Boom west bay with chevron. Attach intertidal boom to each shoreside leg end if available.	Steilacoom	Some road access to Lyle and Cole Points. Strategy best implemented by water.	Birds, high value clam beds, Dungeness Crab.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-27		Anderson Island - East Oro Bay PIE0646 47°-08.64'N 122°-41.53'W	Exclusion booming - Keep oil out of bay	2800'	Boom east bay in a chevron configuration. Attach intertidal boom to each shoreside leg end. If the strategy cannot be deployed as described, or if winds are likely to drive oil past the boom, back up the strategy with 200' to prevent oil from entering the slough.	Steilacoom	Some road access to Lyle and Cole Points. Strategy best implemented by water.	Birds, high value clam beds, Dungeness Crab.
SPS-28		Nisqually NWR/ Nisqually River Sloughs THU0006 47°-05.68'N 122°-41.26'W	Exclusion booming - Keep oil out of sloughs.	400'	Deploy boom across the entrance to the sloughs to the east of the Nisqually River.	Nisqually NWR reach through Thurston Co. EMD. Barn could be command post & bird care center.	Dike behind refuge office. Very shallow area - may need to implement from Nisqually River side.	Waterfowl, fish, wetland area.
SPS-29		Nisqually NWR/ Nisqually River Sloughs THU0007 47°-05.23'N 122°-41.73'W	Exclusion booming - Keep oil out of sloughs.	400'	Deploy boom across the slough to the east of the Nisqually River at the foot bridge.	same as above.	same as above.	same as above.
SPS-30		McAllister Creek THU0025 47°-05.55'N 122°-43.56'W	Exclusion booming - Keep oil out of creek.	1200'	Exclusion boom across McAllister Creek at Luhr Beach (move upstream if upstream spill from I-5).	Could be command post and bird care center.	Luhr Beach (busy); Zittel's or Martin Way access to McAllister.	Hatchery, bird and fish habitat, public use area.
SPS-31		Cove in Hogum Bay THU0029 47°-06.37'N 122°-44.37'W	Exclusion - Keep oil out of cove.	100'	Deploy boom across the mouth of the cove.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-32		Butterball Cove THU0032 47°-07.11'N 122°-45.62'W	Exclusion - Keep oil out of cove.	100'	Deploy boom across the mouth of the cove.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.
SPS-33		Big Slough THU0034 47°-07.31'N 122°-46.52'W	Exclusion - Keep oil out of slough.	300'	Deploy boom across the mouth of the slough.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.
SPS-34		Small cove south of Mill Bight THU0039 47°-08.63'N 122°-47.34'W	Exclusion - Keep oil out of cove.	100'	Deploy boom across the mouth of the cove.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.
SPS-35		Mill Bight THU0042 47°-09.21'N 122°-47.78'W	Exclusion - Keep oil out of cove.	300'	Deploy boom across the mouth of the cove.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.
SPS-36		Small cove south of Baird Cove THU0045 47°-09.57'N 122°-47.93'W	Exclusion - Keep oil out of cove.	100'	Deploy boom across the mouth of the cove.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.
SPS-37		Baird Cove THU0047 47°-09.82'N 122°-48.49'W	Exclusion - Keep oil out of cove.	500'	Deploy boom across the mouth of the cove.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.
SPS-38		Poncin Cove THU0052 47°-10.16'N 122°-48.68'W	Exclusion - Keep oil out of cove.	100'	Deploy boom across the mouth of the cove.	Zittel's Marina or Tolmie State Park.	Access via boat.	Protect bird foraging area, crabs, clams, marsh habitat.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-39		Taylor Bay PIE0249 47°-11.12'N 122°-46.58'W	Exclusion booming - Keep oil out of bay.	1200'	Form chevron - anchor to pilings on north shore and private boat ramp on south shore.	RFK Park - DNR recreation area.	Road access via Whitman Road and Taylor Bay Road.	Shellfish (clams); waterfowl.
SPS-40		Whitman Cove PIE0239 47°-13.25'N 122°-48.33'W	Valve closure - Keep oil out of cove.	100'	Turn off valves to cut off sluice ways (talk to DNR about tide gates). Deploy boom if necessary.	RFK Park - DNR recreation area.	Road access via Bay Road.	Seabird concentrations.
SPS-41		Henderson Inlet THU0104 47°-09.08'N 122°-49.95'W	Exclusion booming - Keep oil out of lower bay and mudflats.	2800'	Deploy boom at an angle across bay, from Cliff Point to the opposite shore.	Boat ramp East shore of Henderson Inlet.	By Boat from Olympia or Tacoma or from I-5 take Sleater Kinney Road NE to Bay Road NE, turn right, proceed to Henderson Road until you see boat launch ramp sign, follow road to boat launch. Johnson Point community boat ramp/private beach, Dr. Gevorian, 822 Libby Road, 4-wheel drive beach access.	Sensitive nesting species; great blue heron; marine mammal haulout, waterfowl concentration.
SPS-42		Chapman Bay THU0093 47°-08.13'N 122°-50.58'W	Exclusion booming - Keep off mud flats and lower bay.	1000'	Boom off mouth of the bay.		Woodard Bay Park; Private boat ramp on 86th (east side of Henderson) will rent out.	Same as above plus seabird concentrations.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-43		Woodard Bay THU0084 47°-07.89'N 122°-50.55'W	Exclusion booming.	400'	Boom off mouth of the bay at the bridge.		Woodard Bay Park; Private boat ramp on 86th (east side of Henderson) will rent out.	Same as above.
SPS-44		Henderson Inlet THU0081 47°-07.20'N 122°-49.95'W	Exclusion - Keep oil out of lower bay and mudflats.	1800'	Deploy boom in a chevron configuration where bay begins to narrow down and get shallow.	Boat ramp East shore of Henderson Inlet.	same as above.	Same as above.
SPS-45		Henderson Inlet "neck" THU0079 47°-06.69'N 122°-49.54'W	Exclusion - Keep oil out of lower bay and mudflats.	900'	Deploy boom across the inlet just north of the portion that becomes a mudflat at low tide.	Zittel's Marina or Tolmie State Park.	Access via boat.	Same as above.
SPS-46		Big Fishtrap THU0111 47°-09.46'N 122°-51.79'W	Exclusion - Keep oil out of the lagoon.	800'	Boom off Lagoon.	Boston Harbor Marina.		
SPS-47		Zangel Cove THU0121 47°-08.64'N 122°-53.48'W	Exclusion booming - Keep oil out of cove.	500'	Boom off cove.	Port of Olympia.	Dirt road access - off Zangel Cove (get address from Don Schluter).	Sensitive nesting species, Great Ble Heron, Marine mammal haulout, waterfowl, and seabird concentrations.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-48		Gull Harbor THU0131 47°-06.75'N 122°-53.46'W	Exclusion booming - Keep oil out of harbor.	400'	Boom off harbor mouth.	Boston Harbor Marina.	Boston Harbor Marina.	Sensitive nesting species, Great Blue Heron, marine mammal haulout, waterfowl, and seabird concentrations, natural undeveloped smelt spawning beaches.
SPS-49		Tykel Cove THU0178 47°-06.01'N 122°-55.91'W	Exclusion booming - Keep oil out of cove.	1800'	Boom off cove.	Port of Olympia.	Port of Olympia boat ramp (East Bay Marina) or Gull Harbor.	Sensitive nesting species, Great Blue Heron, Marine mammal haulout, waterfowl, and seabird concentrations.
SPS-50		Butler Cove THU0172 47°-04.90'N 122°-56.06'W	Exclusion booming - Keep oil out of cove.	500'	Boom off cove.	Port of Olympia.	Port of Olympia boat ramp (East Bay Marina) or Gull Harbor.	Sensitive nesting species, Great Blue Heron, Marine mammal haulout, waterfowl, and seabird concentrations.
SPS-51		Priest Point Park THU0140 47°-04.27'N 122°-53.91'W	Exclusion from Ellis Cove.	400'	Keep oil out of Ellis Cove.	East Bay Marina.	East Bay Marina.	Sensitive cove waterfowl, Osprey nests, Salmon runs, and public recreation area, salt marsh.
SPS-52		East Bay - Budd Inlet THU0149 47°-03.55'N 122°-53.78'W	Containment Booming - Keep oil inside bay if spill at port or I-5.	1600'	Boom off harbor mouth.	East Bay Marina.	East Bay Marina.	Diving ducks, scoters, canvas back, Barrows Goldeneye.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-53		West Bay - Budd Inlet THU0147 47°-03.50'N 122°-54.47'W	Containment Booming - Keep oil inside bay if spill at port or I-5.	2000'	Boom off harbor mouth.	East Bay Marina.	East Bay Marina.	Concentration of diving ducks: scoters, canvasbacks, Barrows goldeneye.
SPS-54		Capitol Lake THU0163 47°-02.62'N 122°-54.48'W	Containment - Keep oil in lake if spill from I-5.	200'	Close dam and bring vac trucks to west shoreline (old swimming beach). Boom off area around tide gate to prevent entrainment.	Capitol Lake parking lot.	5th Avenue.	Puget Sound Resources.
SPS-55		Mouth of Eld Inlet THU0188 47°-08.95'N 122°-55.68'W	Deflection/ Collection - Keep oil out of inlet.	2200'	Boom at 35 degree angle.	Port of Olympia; Frye Cove; Caroline beach.	Sanderson Harbor? shore? for vac trucks, recovery.	
SPS-56		Sanderson Harbor THU0268 47°-08.99'N 122°-56.17'W	Exclusion - Keep oil out of harbor.	300'	Deploy boom across entrance to harbor.	Frye Cove Co. Park (restricted boat launch); Keys Ways Marina.	Frye Cove Co. Park (restricted boat launch); Keys Ways Marina.	
SPS-57		Frye Cove THU0258 47°-06.86'N 122°-57.83'W	Exclusion - Keep oil out of cove.	500'	Boom across cove.	Frye Cove Co. Park (restricted boat launch); Keys Ways Marina.	Frye Cove Co. Park (restricted boat launch); Keys Ways Marina.	
SPS-58		Green Cove THU0201 47°-05.86'N 122°-56.93'W	Exclusion booming - Keep oil out of cove.	700'	Boom off Green Cove.	Port of Olympia boat ramp East Bay.	Evergreen College boat ramp.	Harbor seal haulout.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-59		Young Cove THU0249 47°-06.14'N 122°-58.82'W	Exclusion - Keep oil out of cove.	800'	Boom across cove.	Frye Cove Co. Park (restricted boat launch); Keys Ways Marina.	Frye Cove Co. Park (restricted boat launch); Keys Ways Marina.	
SPS-60		Perry Creek THU0229 47°-03.16'N 123°-00.02'W	Exclusion - Keep oil out of creek.	100'	Boom across mouth of creek at bridge on Madrona Beach Drive.	Park and ride lot south of bridge.	By land using a small skiff, or by boat from Taylor United and Ellison Oyster Co.	
SPS-61		McLane Creek, ebb tide strategy THU0227 47°-02.82'N 122°-59.27'W	Exclusion/Collection - Keep oil in inlet and out of creek if spill from Hwy 101.	300'	Angle boom from southwest corner of bridge over Mud Bay Road to shoreline northeast of bridge, access for vac trucks on northeast side.	Large parking lot at tavern near bridge, ask permission for use.	By land using a small skiff, or by boat from Taylor United and Ellison Oyster Co.	
SPS-62		McLane Creek, flood tide strategy THU0220 47°-02.71'N 122°-59.35'W	Exclusion/Collection - Keep oil in inlet and out of creek if spill from Hwy 101.	300'	Angle boom from northwest corner of bridges over highway 101 to shoreline southeast of bridges, access for vac trucks on southeast side.	Wide shoulder at highway 101, parking area at southeast corner of bridges.	By land using a small skiff, or by boat from Taylor United and Ellison Oyster Co.	
SPS-63		Squaxin Island, cove south of Polela Bay MAS0280 47°-11.32'N 122°-54.90'W	Exclusion - Keep oil out of cove.	600'	Deploy boom across mouth of cove.	Boston Harbor marina.	Boston Harbor Marina, Carlyon Beach boat ramp (private).	
SPS-64		Squaxin Island, Polela Bay MAS0275 47°-11.65'N 122°-55.19'W	Exclusion - Keep oil out of bay.	1500'	Deploy boom across mouth of bay.	Boston Harbor marina.	Boston Harbor Marina, Carlyon Beach boat ramp (private).	

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-65		Hope Island to Carlyon Beach 47°-10.95'N 122°-56.00'W	Exclusion	1800'	Deploy boom from the south end of Hope Island (MAS0260) to Carlyon Beach (THU0279).	Boston Harbor marina.	Boston Harbor Marina, Carlyon Beach boat ramp (private).	Protect fish and wildlife resources in Hammerley and Totten Inlets.
SPS-66		Squaxin Island to Hope Island 47°-11.60'N 122°-55.43'W	Exclusion	1500'	Deploy Boom from Potlatch Point on Squaxin Island (MAS0274) to the north end of Hope Island (MAS0263).	Boston Harbor marina.	Boston Harbor Marina, Carlyon Beach boat ramp (private).	Protect fish and wildlife resources in Hammerley and Totten Inlets.
SPS-67		Squaxin Island Net Pens MAS0299 47°-11.83'N 122°-54.21'W	Exclusion booming - Keep oil away from fish pens.	4800'	Diamond boom around net pens using floats to anchor (pens are comanaged by state and Squaxin Tribe).	Park at Squaxin Island.	Boston Harbor Marina, Carlyon Beach boat ramp (private) - no shoreline access.	Salmon stock. Note - location of high priority stocks changes. Need to get current layout when spill occurs.
SPS-68		Totten Inlet/Gallagher Cove THU0291 47°-08.57'N 122°-58.64'W	Deflection booming - Keep oil out of cove.	1000'	Place boom across mouth of cove.	Boston Harbor marina.	Boston Harbor marina.	Waterfowl, clams & oysters.
SPS-69		Little Skookum Inlet MAS0020 47°-09.22'N 123°-01.08'W	Containment booming - Keep spill out of inlet.	1000'	Boom mouth of inlet from Kamilche Point to Lynch Road.		Lynch Road launch at Arcadia.	
SPS-70		Mill Creek in Hammersley Inlet MAS0068 47°-11.87'N 122°-59.53'W	Exclusion - Keep oil out of Mill Creek.	500'	Boom across Miller Creek.	Small launch - possible.	Carlyon Beach Marina, Olympia or Arcadia launch - Arcadia Point.	Sensitive species nesting in area; fisheries.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-71		Goldsborough Creek MAS0086 47°-12.60'N 123°-05.48'W	Exclusion - Keep oil out of Goldsborough Creek.	100'	Close off entrance to creek.	In Shelton at mill.	In Shelton at Mill.	Salmon Stream.
SPS-72		Chapman Cove MAS0120 47°-13.65'N 123°-02.57'W	Exclusion - Keep oil out of cove.	1800'	Boom off entrance to Chapman Cove.	Sunset Road?	Shelton Launch.	Clams, fish, and archaeological sites.
SPS-73		Oakland Bay MAS0113 47°-12.60'N 123°-03.00'W	Exclusion booming.	1500'	Close off inlet at Golf Course to Daniels Road.	Golf Course and Highway 3.	Boat launch at Shelton. Highway 3 near Bay Shore golf course.	Mudflats, marine mammal haulouts.
SPS-74		Cove west of Salmon Point on west shore of Pickering Passage MAS0156 47°-13.47'N 122°-56.28'W	Exclusion - Keep oil out of cove.	600'	Deploy boom across mouth of cove.	Public boat ramp at bridge to Hartstene Island.	Access via boat.	
SPS-75		Small channel to cove in SPS-74 MAS0159 47°-14.01'N 122°-56.00'W	Exclusion - Keep oil out of cove.	100'	Deploy boom across channel.	Public boat ramp at bridge to Hartstene Island.	Access via boat.	

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-76		Cove just north and west of Salmon Point on west shore of Pickering Passage MAS0160 47°-14.13'N 122°-56.08'W	Exclusion - Keep oil out of cove.	200'	Deploy boom across cove at bridge to island.	Public boat ramp at bridge to Hartstene Island.	Access via boat.	
SPS-77		Jones Creek MAS0170 47°-16.03'N 122°-55.67'W	Exclusion - Keep oil out of creek and estuary.	500'	Boom off entrance to cove leading to estuary and creek.	Jarrell Cove State Park or boat ramp at bridge to Hartstene Is.	Access via boat.	
SPS-78		Cove inside Sun Point MAS0177 47°-17.05'N 122°-55.32'W	Exclusion - Keep oil out of cove.	400'	Deploy boom across entrance to cove.	Jarrell Cove State Park.	Access via boat.	
SPS-79		West cove across Pickering Passage from Jarrell Cove MAS0180 47°-17.59'N 122°-54.06'W	Exclusion - Keep oil out of cove.	1000'	West cove, anchor from bulkhead on west side to point, 100# anchor in middle.	Jarrell Cove State Park.	Access via boat.	
SPS-80		Center cove across Pickering Passage from Jarrell Cove MAS0181 47°-17.60'N 122°-53.72'W	Exclusion - Keep oil out of cove.	300'	Center cove, anchor to bluff on west side, 100# anchor in middle.	Jarrell Cove State Park.	Access via boat.	

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-81		Jarrell Cove MAS0372 47°-17.15'N 122°-53.11'W	Exclusion - Keep oil out of cove, protect Jarrell Cove State Park.	1000'	Boom off cove with chevron configuration.	Jarrell Cove State Park.	Carlyon Beach boat ramp (private); full facilities at park.	State Park.
SPS-82		McLane Cove MAS0191 47°-18.59'N 122°-51.76'W	Exclusion Booming - Keep oil out of cove.	2000'	Boom off cove with chevron formation.	Jarrell Cove State Park.	Grapeview Loop Rd./Jarrell Cove State Park.	
SPS-83		Small slough just west of Stretch Island MAS0200 47°-19.40'N 122°-50.38'W	Exclusion - Keep oil out of slough.	200'	Deploy boom across entrance to slough, primarily to north.	Jarrell Cove State Park.	Access via boat.	
SPS-84		Sherwood Creek and estuary MAS0238 47°-22.53'N 122°-50.06'W	Exclusion - Keep oil out of bay/estuary.	500'	Deploy boom across bay at the bridge on Grapeview Loop Road.	Victor and/ or Allyn.	Access via Hwy 302 to both sides of bay. Need shallow draft boats.	Wetlands, mudflats, and Coulter Creek hatchery, winter concentrations of Grebes & Murres.
SPS-85		Case Inlet (North Bay) MAS0241 47°-23.09'N 122°-49.53'W	Deflection/ Collection - Keep oil out of bay.	1000'	Deploy deflection boom at Allyn (angled SE) Collect oil w/ vac trucks.	Victor and/ or Allyn.	Access via Hwy 302 to both sides of bay. Need shallow draft boats.	Wetlands, mudflats, and Coulter Creek hatchery, winter concentrations of Grebes & Murres.
SPS-86		Coulter Creek MAS0249 47°-23.43'N 122°-49.09'W	Exclusion Booming - Keep oil out of creek.	4000'	Deploy boom at the power lines, using the towers as anchor points.	Victor and/ or Allyn.	Access via Hwy 302 to both sides of bay. Need shallow draft boats.	Coho, Chinook & Chum. Winter concentrations of Grebes & Murres.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-87		Case Inlet (North Bay) MAS0254 47°-22.74'N 122°-48.97'W	Deflection/ Collection - Keep oil out of bay.	1000'	Deploy deflection boom at Victor (angled SW) Collect oil w/ vac trucks.	Victor and/ or Allyn.	Access via Hwy 302 to both sides of bay. Need shallow draft boats.	Wetlands, mudflats, and Coulter Creek hatchery, winter concentrations of Grebes & Murres.
SPS-88		Rocky Bay PIE0181 47°-21.67'N 122°-47.26'W	Exclusion Booming - Keep oil out of Bay.	1200'	Chevron from the sand spit to the north and the wooden bulkhead to the south.	Vaughn boat launch area.	Hwy. 302 & Bond Road.	Winter concentrations of Grebes & Murres.
SPS-89		Small creek to south of Rocky Bay PIE0184 47°-21.50'N 122°-47.12'W	Exclusion - Keep oil out of creek.	100'	Deploy boom across small creek to the south of Rocky Bay.	Vaughn boat launch area.	Hwy. 302 & Bond Road.	Winter concentrations of Grebes & Murres.
SPS-90		Vaughn Bay PIE0189 47°-20.58'N 122°-47.12'W	Exclusion Booming - Keep oil out of bay.	500'	Boom off bay by angling boom from pilings to shore.	Vaughn, boat ramp.	Access via boat.	Seabird concentrations.
SPS-91		Dutcher Cove area PIE0206 47°-18.38'N 122°-47.32'W	Exclusion Booming - Keep oil out of stream.	1000'	Boom off cove with chevron formation.	Vaughn, boat ramp.	Access via boat.	Seabird concentrations.
SPS-92		Small Cove South of Dutcher Cove PIE0211 47°-18.02'N 122°-47.18'W	Exclusion Booming - Keep oil out of stream.	100'	Place 100' section across small opening south of cove.	Vaughn, boat ramp.	Access via boat.	Seabird concentrations.

4.3.2 Proposed Booming and Collection Strategies: Matrices

Strategy	Status	Location	Response Strategy	Length of Boom	Strategy Implementation	Staging Area	Site Access	Resources Protected
SPS-93		Herron Bay PIE0217 47°-16.51'N 122°-48.67'W	Exclusion - Keep oil out of bay.	100'	Deploy boom across mouth of bay at bridge.	Parking area at dock for Herron Island.	Road access via North Herron Rd, or via boat.	
SPS-94		Cove north of Whitman Cove and due east of McMicken Is. PIE0232 47°-14.74'N 122°-49.71'W	Exclusion booming - Keep oil out of cove.	100'	Boom off entrance to cove.	RFK Park - DNR recreation area.	Road access via Russell Road.	Salmon stream, wetland habitat, seabird concentrations.
SPS-95		McMicken Island MAS0347 47°-15.00'N 122°-51.89'W	Exclusion booming - Keep oil off island.	2500'	Deploy boom from the north end of the island to the beach to the west.	Zittel's Marina or Johnson Point.	Zittel's Marina or Johnson Point.	Marine mammal haulout; seabird concentrations.
SPS-96		McMicken Island MAS0346 47°-14.71'N 122°-51.92'W	Exclusion booming - Keep oil off island.	1700'	Deploy boom from the south end of the island to the beach to the southwest.	Zittel's Marina or Johnson Point.	Zittel's Marina or Johnson Point.	Marine mammal haulout; seabird concentrations.